



Message from Department Chair, Mike Poellot

Greetings!

Welcome to the Fall 2019 edition of our newsletter. We've had a very exciting year with many accomplishments and events to showcase. In addition to the activities described in this letter, I'd like to highlight some other news.

Several of our faculty received promotions, effective this fall semester: Gretchen Mullendore was promoted to Professor, David Delene was promoted to Research Professor, and Aaron Kennedy was promoted to Associate Professor of Atmospheric Sciences. These were in recognition of the achievements and hard work put in by these individuals. Congratulations to all!

Classes and labs are now being held in the Leon F. Osborne Weather Center (formerly RWIC) in Odegard Hall. AWIPS2 software is running on 24 work stations and the facility is open for student use when classes are not in session. A student lounge area is under design as part of the Center.

Our weather broadcast facility was upgraded in August with the newest version of the Baron broadcast system. Shows are being produced by students twice daily Monday through Friday and posted to our web site <https://aero.und.edu/atmos/>. While at the site you can also visit the UND Skycam, livestreaming from the top of Clifford Hall.

As you may have already noticed, the web sites across the UND campus have undergone major revision in the past year. Changes were made to make navigation easier and to make the sites more informative and attractive to potential new students. If you have any difficulty in finding things in the AtSci web site or if you have suggestions, please let me know.

One additional item in the letter that I would like to draw your attention to is the upcoming celebration of the 100th anniversary of the AMS in Boston. We will be hosting an alumni reception as part of the activities, so stay tuned for further details. We hope that you will be able to attend!

Mike

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American Geophysical Union (AGU) Annual Meeting

The 50th Annual Meeting of the American Geophysical Union (AGU) was held December 10 – 14, 2018 in Washington, DC. Professor Dr. Jianglong Zhang, along with MS Student Jon Starr attended the conference.

Dr. Zhang presented a poster titled “*Towards the Understanding of Artificial Light Sources for Regional Nighttime Aerosol Retrievals Using VIIRS DNB*”. and Jon gave an oral presentation titled “*Measuring the Impact of Human Decision Making through Utilization of a Coupled Crop Simulation and Economic Land-Use Model*”

UND ATMOSPHERIC SCIENCES ALUMNI RECEPTION AT AMS 100 IN BOSTON

The UND Atmospheric Sciences department, in conjunction with the John D. Odegard School of Aerospace Sciences, is planning to host an Alumni Reception at the 100th Annual Meeting of the American Meteorological Society. This will be held Tuesday evening, January 14th. We are still working on the location and details. Once we have more information we will email it to all alumni and send it out via social media. We hope to see you in Boston in January 2020!!

Atmospheric Sciences Alumni Dinner at AMS in Phoenix on January 7, 2019



Front row L-R: Wanda Seyler, Erica Dolinar, Julianne Glinskas (incoming undergrad), Greg Sova (incoming MS student), Anna Erickson, Matt Saari, Mounir Chrit (post-doc)

2nd row L-R: Megan McCabe, Paul Kucera, Akila Sampath, **Nick Gapp**, Ryan Patnaude, Andy Newman, **Kaela Lucke**, **Nicole Loeb**

3rd row L-R: Aaron Kennedy, Jonathon Klepatzki (prospective MS student), David Delene, Gretchen Mullendore, Kurtis Pinkney, Ted McHardy, **Harrison Rademacher**, Emalie Johnson, **Matt Tuftedal**

4th row L-R: Corey Amiot, **Nicole Stevens**, Mariusz Starzec, **Blake Sorenson**, **Grant Gutierrez**, **Kyle Pederson**, Kyle Hilburn, **Braxton Aldridge**, Ryan Stanfield and Ben Raback-Schink

** current students in bold type

99TH AMERICAN METEOROLOGICAL SOCIETY ANNUAL MEETING, STUDENT CONFERENCE AND CAREER FAIR

The 99th Annual Meeting of the American Meteorological Society (AMS) was held January 5 – 10, 2019 in Phoenix, Arizona. The Atmospheric Sciences department had a table at the Career Fair which is intended to facilitate the networking process for both applicants and recruiters. Those attending from UND were: *Faculty members* – **Dr. Gretchen Mullendore, Dr. Mark Askelson, Dr. Aaron Kennedy, Dr. David Delene and Dr. Jianglong Zhang;** *Staff members* – **Dr. Mounir Chrit, Dr. Mariusz Starzec and Wanda Seyler;** *Grad Students* - **Aaron Scott, Blake Sorenson, Grant Gutierrez, Kayla Lucke, Matt Tuftedal, Natalie Midzak, Nick Gapp, Nicole Loeb, Nicole Stevens, Ron Stenz, Taylor Trask;** *Undergrads*- **Alexa Otto, Anna Erickson, J. Braxton Aldridge, Emalie Johnson, Harrison Rademacher, Kyle Pederson, Megan McCabe.** Kyle, Alexa, Braxton and Harrison are current AMS (2018-19) officers for the UND student chapter.

Posters or talks were presented by the following people:

Dr. Gretchen Mullendore led a breakout session titled “*Outside the Box Skill Sets*” and an oral presentation titled “*Determination of Best Tropopause Definition for Convective Transport*” she also co-chaired the Special Symposium on Mesoscale Meteorological Extremes: Understanding, Prediction, and Projection and served as a session chair for the Conference on Atmospheric Chemistry; **Natalie Midzak** presented a poster titled “*An Observational-Based Approach for Studying Cirrus Microphysical Properties with the Combined Use of Lidar and Polarimeter Observations*”; **Taylor Trask** presented a poster

titled “*The Impact of Unmanned Aircraft System Observations on Convective Initiation Along a Boundary in Numerical Weather Prediction*”; **Blake Sorenson** presented a poster titled “*Development at the University of North Dakota of a Digital Thermosonde Instrument for the Study of Atmospheric Optical Turbulence*”; **Dr. Mariusz Starzec** gave an oral presentation titled “*Ground-Based Radar Retrievals of Convective Detrainment Heights*”; **Nick Gapp** presented a poster titled “*Comparisons of Florida Thunderstorm Cirrus Clouds Using Concurrent Radar and Aircraft Measurements*”; **Dr. Aaron Kennedy and Nicole Loeb** presented a poster titled “*A Low-Cost, Open-Source Snowflake Imager*”; **Dr. Kennedy** gave an oral presentation titled “*Identifying Northern Great Plains Blizzards in the Past, Present, and Future*”; **Alexa Otto** presented a poster titled “*Characterization of Liquid Smoke by Size Distribution and Kappa Values*”; **Harrison Rademacher** presented a poster titled “*Bacteria in Thunderstorm Anvils*”; **Dr. Jianglong Zhang** presented two oral presentations titled “*An Innovative Approach for Deriving CALIOP-Based Particulate Matter Concentrations Through a Bulk-Mass-Modeling-Based Method*” and “*Improving Aerosol Analysis and Forecast over the Arctic Region with OMI Assimilation*”; **Blake Sorenson** presented a poster titled “*Effects of Elevation Errors on the Calculation of Station Pressure*” and **Aaron Scott and Dr. Kennedy** presented a poster titled “*Initial Development for Simulating Land Surface Change Impacts on Climate in the Northern Great Plains*”.

Follow the Atmospheric Sciences
SkyCam from the roof of Clifford
Hall on YouTube!

youtube.com/undatmosphericsscience

If you received a copy of this newsletter in the mail and would prefer to receive it via email, please drop Wanda an email at wanda.seyler@und.edu and I will get you added to the email list.



30th Annual Awards & Scholarship Banquet

The 30th Annual Awards & Scholarship Banquet was held on April 5, 2019 at the Hilton Garden Inn. The guest speaker was **Dr. Patrick Marsh**, Warning Coordination Meteorologist, NOAA Storm Prediction Center in Norman, Oklahoma.

Special guests were Aerospace College Dean Paul Lindseth, Associate Dean **Beth Bjerke**, and **Kathy Osborne**, Vice President, Operations, Iteris.

The UND AMS Student Chapter presented the following awards to the faculty: *Best Freshman & Sophomore Professor* – PhD Student **Aaron Scott**; *Best Junior & Senior Professor* – **Jianglong Zhang**; *Best Academic Advisor* – **Fred Remer**; *Golden Reamer Award* – **Matt Gilmore**; *7-Eleven / Most Available Professor* – PhD Student **Mariusz Starzec**; *Department Powerhouse Award* – **Sue McWilliams** and **Wanda Seyler**.

The following awards were presented to the following undergraduates: *Outstanding Undergraduate Teaching Assistant* – **J. Braxton Aldridge**; *Outstanding Undergraduate Student Researcher* – **Jacob Zanker & Anna Erickson**; *Outstanding Student Broadcaster* – **Jared Swanson & Ben Remington**; *Outstanding Sophomore* – **Bruce A.**

Smith Aerospace Scholarship – **Evan Rys**; *Outstanding Junior* – **John D. Odegard Aerospace Sciences Scholarship** – **Jacob Zanker**; *Outstanding Freshman* – **Casey Toavs**; *Outstanding Graduating Senior* – **Kyle Pederson**; *Outstanding Service to the Department* – **Kyle Pederson**. The *Science Engineering Associates Scholarship* was presented to **Alexa Otto and Nicole Loeb**; the *Carlton Bjerkaas Atmospheric Sciences Scholarship* was presented to **Erin Doyle, Casey Toavs, Harrison Rademacher and Devin Bissel**; and the *Bavendick Scholarship* was presented to **Aanan Schlieff**. The “*Faculty Award*” for the *Outstanding Undergraduate* was given to **Alexa Otto**.

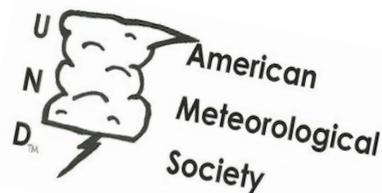
The AtSc Graduate Student Association presented a few graduate student awards as follows: *Pigpen Award* - **Matt Tuftedal**; *Most Caffeinated* - **Jon Starr**; *Perfect Attendance* - **Blake Sorenson**; *Hallmark Award* - **Nikki Carson** and *Take Out King* - **Jared Marquis**.

The “*Faculty Award*” to the *Outstanding Undergraduate* was presented to B.S. senior **Alexa Otto** at the AtSc end of semester potluck in December 2018. This included a scholarship to be used for her last undergraduate semester at UND.

2019 - 2020 AMS OFFICERS



Left to Right: **Al Borho**, AMS Advisor; **Tony Weiss**, **Jacob Zanker**, **Natalie Odier**, **Dillon Vogt**, **Emily Archer**, **Evan Rys** and **Harrison Rademacher**,



New Faculty Hire ~ Assistant Professor Cathy Finley, PhD



Catherine (Cathy) Finley grew up on a farm outside of Benson, MN (in west-central MN). She received her B.S. in Meteorology from Iowa State University. Cathy started working on her master's degree at Iowa State, but her adviser took a job at U.C. Da-

vis about halfway through her master's program, so she followed him to Davis to complete her master's degree. Cathy received her Ph.D. in Atmospheric Science from Colorado State University.

Cathy did a brief post-doc (~6 months) at Colorado State before she accepted a faculty position at the University of Northern Colorado. She was an Assistant Professor at UNC for 4 years, and an Associate Professor for 1.5 years. An opportunity came up to join WindLogics, a start-up company in Minnesota that focused on renewable energy, and so she and her partner Bruce Lee decided to change gears and work in private industry. Cathy worked as a Senior Atmospheric Scientist at WindLogics for ~12 years, during which time WindLogics was acquired by Next Era Energy Resources, the largest wind energy developer in North America. She missed working with students

and grew tired of the 'corporate culture', so she accepted a faculty position at St. Louis University for 3.5 years before joining the Atmospheric Science Department at UND in January 2019.

Cathy lives with her significant other Bruce Lee and 4 'furbabies', cats Nimbus, Simba, Cricket, and Tiger. Her hobbies include photography (especially nature and wildlife), gardening, biking, and music.

Her main research focus is high-resolution numerical modeling of supercells and tornadoes, with the aim of better understanding the processes contributing to tornadogenesis and maintenance of long-track tornadoes. Cathy is also interested in continuing to collect data around severe storms aimed at improving our understanding of the connection between storm downdrafts/boundary features and tornadogenesis. She plans to pursue research that benefits the wind energy industry, primarily through data collection and numerical model development to better understand and forecast the near-surface wind resource.

National Weather Service Training Center—Kansas City

UND-AMS Officers 2019-2020

President - Harrison Rademacher

Vice President - Natalie Odier

Secretary - Tony Weiss

Treasurer - Jacob Zanker

Historians - Emily Archer &
Dillon Vogt

Student Liaison to Undergraduate

Curriculum Committee - Evan Rys



NWS New Employee Training in Kansas City, MO in June 2019 with UND Alumni

L to R: Jeff Zeltwanger, AtSc BS 2000;
Samantha Carr, AtSc MS 2018, NWS, Louisville, KY;
Marco Bohorquez, AtSc BS 1996

Alumni News

Yingxi (Rona) Shi grew up in Hangzhou China, a beautiful tourism city.

She completed her undergraduate degree in 2006 at Sun Yat-sen University, and received her Master's in 2009 and PhD in 2015 from UND.



Rona is employed at the Joint Center for Earth Systems Technology (JCET) University of Maryland Baltimore County/ NASA Goddard Space Flight Center (GSFC).

She is married to Jeff Kuntz, a BS and MS Atmospheric Sciences graduate of UND. They have two daughters, Jade (5 yrs.) and Zoe (1 yrs.). Her hobbies are photography, traveling, reading, gardening.

Brittany (Tague) Beuning graduated from the UND Atmospheric Sciences program in May of 2016 with her B.S. degree. This fall, she is starting her M.S. degree in Environmental Science at the University of Idaho. Her focus will be on water contamination and treatment as well as environmental regulation and permitting. Brittany grew up in Farmington, MN and then moved to Rosemount, MN before starting high school. She now lives just outside of Bismarck in Lincoln, ND with her husband, John, and their dog, Georgia. They were married in Kimball, MN in August 2018.

Brittany works for Great River Energy at the Coal Creek Station power plant in Underwood, ND as a chemist. In the lab, they operate and monitor a system that makes ultra-pure water that we treat for use in the boiler. They also run tests on the coal to monitor its proficiency. Outside of work, she enjoys teaching skating lessons like she did while in college. Brittany coaches basic skills lessons through the Bismarck Figure Skating Club two days a week. For fun in the summer, they enjoy taking the boat out on the river and hitting golf balls around the park near their house. During the winter, they love going ice fishing and snowboarding. They also try to make it back to Grand Forks at least once, if not twice a year for a UND hockey game.



Brandee (Smith) Harral grew up in Sioux Falls, SD. Upon completing her B.S. degree at UND in Atmospheric Science in 2003 she was commissioned into the US Air Force. She has fulfilled a number of military assignments as a weather officer at various locations within the states and overseas in both Japan and Belgium. Currently she resides in Tempe, Arizona where she serves the commander for the Air Force Reserve Officer Training, Detachment 025 at Arizona State University.

Brandee is married to Sean and has two daughters, Elliana (7) and Aubree (5). Her hobbies include travel and reading.



Dr. David Delene, Research Professor, Grad Students Kendra Sand and Shawn Wagner, along with undergrad student Harrison Rademacher were near Cape Canaveral, Florida flying in thunderstorm anvils between July 22nd and August 4th for the CapEx19 field project in conjunction with the U.S. Navy. Undergraduate student David Singewald assisted with the pre-flight activities in Fargo before the plane left for Florida. They flew the North Dakota Citation Research Aircraft based at the Space Coast Regional Airport near Titusville, Florida. The Citation Research Aircraft, operated by Weather Modification International in Fargo, ND, was used to conduct airborne measurements of cloud properties during the Florida field project. Delene says the U.S. Navy has a keen interest in modeling clouds on a global scale.



Recent AtSc Graduates

December 2018 M.S. Graduate

Elizabeth Staatz

December 2018 Ph.D. Graduate

Mariusz Starzec

May 2019 B.S. Graduate

Joel Braxton Aldridge

Hanna Beard

Anna Erickson

Emalie Johnson

Megan McCabe

Alexa Otto

Kyle Pederson

August 2019 M.S. Graduate

Nick Gapp

Matt Tuftedal

August 2019 Ph.D. Graduate

Katelyn Barber

**Congratulations!!
Graduates!!**

"A Lifetime of Impact: Leon Osborne"

The Atmospheric Sciences Graduate Student Association have put together a hard copy version of the book titled "A Lifetime of Impact: Leon Osborne". To view this product follow the link to Shutterfly and set up an account. From Shutterfly you will be able to purchase a copy of this book.

<https://share.shutterfly.com/action/welcome?sid=sAbOWrhy2as2Lyw&cid=SM-PBAPP>

Incoming Graduate Students

Spring Semester 2019 we had two students begin their Master's studies. **Kendra Sand**, Bloomington, MN, earned her B.S. in 2009 from Embry Riddle Aeronautical University in Arizona. She served two tours of duty in the Air Force before separating in 2018. **Lance Wilson**, a 2018 AtSc BS graduate, from Harwood, ND, worked for Dr. Jianglong Zhang between finishing his B.S. and starting his M.S.

The Fall of 2019 we will have eight new graduate students working on their Master's.

They are (**Joel**) **Braxton Aldridge**, Weatherford, TX, received his B.S. from UND AtSc in May 2019; **Joseph Gufford**, Port Saint Lucie, Florida, is a 2015 B.S. graduate of Florida State University in Tallahassee and has been working for FEMA since 2015; **Donald Long**, Merrillville, Indiana, is a 2019 B.S. graduate of Valparaiso University; **Christian Nairy**, Webster, New York, is a 2019 B.S. graduate from State University of New York—Oswego; **Kyle Pederson**, Brooklyn Park, Minnesota, is a 2019 UND AtSc graduate; **Alec Sczepanski**, is from Lancaster, New York, and is a 2019 B.S. graduate from State University of New York—Oswego; **Elizabeth Sims**, Hebron, Kentucky, is a 2019 B.S. graduate of Birmingham Southern College in Alabama; **Greg Sova**, from Auburn, Michigan, is a 2019 B.S. graduate of the University of Louisiana at Monroe.

ALUMNI NEWS WANTED

We are looking for news about you to share with other alumni in our upcoming newsletters (information about your current position, significant achievements, family activities, etc.). Also if you could please send us your current e-mail address and address changes it would be appreciated. If you have any ideas or comments about the newsletter, please send them to Wanda at: wanda.seyler@und.edu.

DEPARTMENT OF ATMOSPHERIC SCIENCES

As you can see in this newsletter there is a lot going on in the Department of Atmospheric Sciences and we have been able to celebrate many successes. We would not have been able to accomplish much of what we do without the support we have enjoyed from the University and from the Dean's Office in the Odegard School. Still, we have ongoing needs to further help our students and programs thrive. To improve the educational opportunities for our students, we have determined two specific priorities that would greatly benefit from additional funding support: student scholarships and academic equipment.

At this time, we are asking friends, colleagues and former students of Leon Osborne to join in cementing his legacy by establishing a scholarship endowment in his honor. The Leon F. Osborne Science and Society Award endowment will provide scholarships to students enrolled in Atmospheric Sciences within the Odegard School. The Award will target students who have demonstrated an understanding of the importance of atmospheric science to society and who are pursuing a career that would provide a direct benefit to the needs of society by promoting enhanced applications of the atmospheric sciences to address societal issues.

The other goal I would like to highlight is to upgrade several hardware and software components of our Doppler weather radar. This system, dubbed the "NorthPol" radar, was last upgraded in 2004 so some parts are at the end of their useful life. Students use NorthPol in their weather radar coursework and for collecting data for Senior Project research. We want our students to have the opportunity to work with state-of-the-art tools to adequately prepare them for entry into the work force.

If you are able to help with these priorities, please contact myself or Jonathan Gehrke. Our contact information is listed below. Your support is greatly appreciated.

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